Source Water Assessment Program (SWAP) Report for Sports Haven Mobile Home Park

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
February 11, 2002

Table 1: Public Water System (PWS) Information

PWS Name	**Sports Haven Mobile Home Park**
PWS Address	**Mill Valley Road, State Route 21**
City/Town	**Belchertown, Massachusetts**
PWS ID Number	**1024001**
Local Contact	**Ms. Trudy Drosehn**
Phone Number	**413-323-7206**

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well 1	1024001-01G	341	1296	High
Well 2	1024001-02G	341	1296	High

INTRODUCTION

We are all concerned about the quality of the water we drink. Many potential contaminant sources, including septic systems, road salt and improperly disposed of hazardous materials may threaten the quality of water from drinking water wells. Citizens and local officials can work together to better protect drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. DESCRIPTION OF THE WATER SYSTEM

The Sports Haven Mobile Home Park is a year round, residential mobile home park with a population of approximately 150 people. The 52.9-acre facility has 54 closely located mobile homes, all utilizing on-site septic systems. Some units have individual septic systems while some share a system between two units. The facility has one active supply well, new dug well 02G. Very little information is available regarding the structure and functioning of the old dug well, 01G. A 6 x 6 foot vault is partially filled with water approximately 25 feet from the edge of the pond. There are no records for this source and there is no connection to the distribution system from that vault. However, active distribution pipes pass through the vault. The new dug well 02G was constructed in 1974, replacing the old well and is a 3-foot diameter by 16-foot deep, tile, dug well. The Zone I protective radii for Well 01G and 02G is 341 feet. The Interim Wellhead Protection Area (IWPA) radii for 01 and 02G is 1,296 feet. The protective

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

radii were based on the pump capacity rate of 28 gallons per minute, as measured during site visits. Although the pump reportedly runs continuously, 24-hours per day, the metered usage for the two highest months on record for well 02G is in excess of the pumping capacity rate. A new meter was installed in September 2000 and the facility manager is attempting to address leaks and uncontrolled water use at the facility. However, until consistent reduction in water usage is documented and verified, the conservative water usage is based on the capacity rate of the pump. The Zone I is the area immediately around the wellhead while the IWPA is a larger area that likely contributes water to the wellhead. The IWPA is only an interim protection area; the actual area of contribution to the wells may be larger or smaller. Please refer to the attached map that shows the Zone I and IWPA radii.

The wells are shallow surficial sand and gravel wells located within a stratified drift deposit mapped as a moderate yield aquifer; there is no fine-grained confining unit, such as clay, mapped in this area. The bedrock is mapped as the Belchertown Complex, an intrusive quartz monzodiorite. Wells drilled in these conditions are considered highly vulnerable to potential contamination from the ground surface because there is no significant hydrogeologic barrier, such as clay, to prevent surface contamination from migrating into the bedrock aquifer. The shallow nature of the dug well provides minimum natural filtration.

The Sports Haven Mobile Home Park well water does not require and does not have treatment at this time. For current information on monitoring results, please review the Consumer Confidence report (CCR) that is issued annually by the water supplier or refer questions to the water supply contact listed above in Table 1.

2. DISCUSSION OF LAND USES IN THE PROTECTION AREAS

A number of land uses and activities within the drinking water supply protection areas are potential sources of contamination. Therefore, the overall ranking of susceptibility to contamination for the wells is high, based on the number and proximity of land uses and activities in the Zone I and IWPA, as seen in Tables 2 and 3.

Key Land Use Issues for the Wells include:

1. **Non-conforming activities in the Zone Is**
2. **Septic Systems within Zone I**
3. **Above Ground Storage Tanks (ASTs)**

Table 2: Table of Activities Common to the Protection Areas

Potential Sources of Contamination	Zone I	IWPA	Threat	Comments
Trailers, lawns and residential parking	Both Wells	Both Wells	Moderate	Household hazardous materials, pesticides and herbicides
All components of septic systems	Both Wells	Both Wells	Moderate	Conventional and cesspools
Parking lots and driveways	Both Wells	Both Wells	Moderate	Limit road salt usage and provide drainage away from wells
Internal transportation corridor	Both Wells	Both Wells	Moderate	Road salt, spills and runoff
Aboveground Storage Tanks (AST, home heating kerosene)	Both Wells	Both Wells	Moderate	Kerosene

***- For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

1. Non-conforming activities in the Zone Is – The Zone Is for wells 01G and 02G are non-conforming with respect to MA DEP land use restrictions, which allow only water supply related activities in Zone Is. The Zone I for Well 02G contains 16 homes and related facilities including septic disposal. (One trailer was removed and one of the 16 trailers has been destroyed by fire but remains on-site). In addition, off of the facility property, there is a vault that may be an old well within the Zone I of 02G. Please note that systems not meeting DEP Zone I requirements must receive DEP approval and address Zone I issues prior to increasing water use, modifying systems or conducting any activities within Zone I. Normal residential activities generally pose minimal threat to the water quality of the public water supply provided homeowners are aware of the potential hazards of household waste, lawn care chemicals, animal waste and septic systems and they utilize best management practices. Due to the close proximity of the residents to the shallow well, the potential threat is significant if not properly managed.

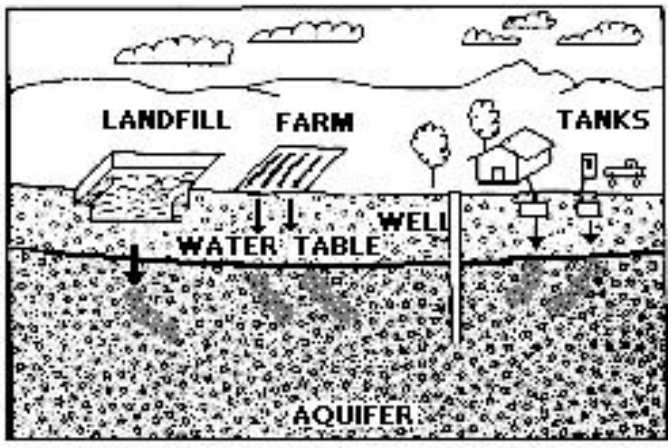

Figure 1: Example of how a well could become contaminated by different land uses and activities.

The metered water use for the system is, at times, significantly higher than the anticipated usage for a facility of this size. This excess use may be due to unchecked, excessive water use by tenants or leakage. Excessive water use expands the area of contribution to the well, increasing the potential impact from activities in the area.

Recommendations:

- ✓ Investigate the viability of the Old Dug well 01G. Abandon and decommission that well, as you have proposed.
- ✓ Continue your on-going efforts in leak detection and repair.
- ✓ Establish a policy for the use of low flow plumbing units and conservation measures and remind tenants to conserve water.
- ✓ Relocate well to mitigate threat to the water supply.
- ✓ Ensure that any old connection to to the system are severed, such as to the old farm house.
- ✓ Monitor existing activities within Zone I. Do not conduct any additional activities within the Zone I.
- ✓ Provide information to residents about the potential hazards and liability of household chemicals, lawn care chemicals and fertilizers. Include information on Best Management Practices (BMPs) for the use of those items and proper septic system maintenance and disposal practices.
- ✓ Prepare a wellhead protection and emergency response plan.
- ✓ Contact MA DEP prior to conducting any new activities within Zone I.
- ✓ Contact the property owner to gain access to the property to investigate the open vault. If there is a potential open conduit, such as an abandoned well, request that the owner decommission the unit and fill in the vault.

2. Septic system components – Eight shared septic systems, four individual systems and one cesspool, are located within the Zone I of 02G. An equivalent number of systems are within the Zone I of 01G. Improper disposals of household hazardous waste through septic systems as well as, close proximity of the systems to the shallow well, pose a significant potential threat to water quality.

Recommendations:

- ✓ Refer to recommendations under Item 1.
- ✓ Continue the current practice of routine maintenance and replacement as appropriate, of the systems.

3. Aboveground Storage Tanks – All of the homes have aboveground kerosene and/or propane storage tanks. The facility does not have a tank replacement or maintenance policy.

Recommendations:

- ✓ Establish a policy for replacement of aging tanks (consider 10-15 years); require containment, at a minimum a concrete pad and maintenance, such as painting, for all new tanks. Require at a minimum, routine inspection and painting of existing tanks.
- ✓ Monitor for leaks and spills periodically, especially during delivery.

Work with the DEP and local officials regarding protecting the water supplies through emergency response coordination.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

For More Information:

Contact Catherine Skiba in DEP's Springfield Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

3. PROTECTION RECOMMENDATIONS

To reduce the system's susceptibility to contamination, the Sports Haven Mobile Home Park should review and adopt the following recommendations:

Priority Recommendations:

- ✓ Reduce water usage through leak repair, conservation measures and informing tenants of the necessity to conserve water.
- ✓ Abandon and decommission well 01G and consider replacing well 02G.

Zone I and IWPA:

- ✓ Keep all new non-water supply activities out of the Zone I.
- ✓ Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use, modifying their system or conducting any additional non-conforming activities in Zone I.
- ✓ Prohibit public access to the well and pump house by locking facilities, gating roads, and posting signs. Check the integrity of the well caps regularly and replace as necessary.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, check any aboveground tanks for leaks, etc.
- ✓ Investigate alternative sites for a new well and protect that land for future use through purchase or conservation restriction that would prohibit potentially threatening activities.
- ✓ Work with the DEP and local officials regarding protecting the water supplies through emergency response coordination.
- ✓ Be sure that the town is aware that your facility is a public water supply so that you can be notified of any accidents or threats from accidents.

Facilities Management:

- ✓ Encourage residents to utilize the Town's household hazardous waste collection days. To learn more, see the hazardous materials guidance manual at http://www.state.ma.us/dep/consumer/consumer.htm
- ✓ Establish policies regarding vehicle maintenance, lawn care and oil/hazardous material storage tanks, especially in Zone I.
- ✓ Repair leaks as soon as practical. Continue the current practice of on-going leak detection and repair. Establish water use restrictions as necessary to control excess water usage.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. Especially the transformers in Zone I. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in Belchertown to include the facility IWPA in the Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment will be provided to the public water supplier, town boards, and the local media.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. ATTACHMENTS

- Maps of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet
- Developing a Local Wellhead Protection Plan
- Pesticide Use Fact Sheet
- Fertilizer Use Fact Sheet
- Septic system brochure
- Household Hazardous Waste information